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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,097	11/13/2001	Byung Keun Lim	HI-0050	6526
34610	7590	07/18/2005	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			CHO, HONG SOL	
			ART UNIT	PAPER NUMBER
			2662	
DATE MAILED: 07/18/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/987,097		LIM, BYUNG KEUN	
	Examiner		Art Unit	
	Hong Cho		2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-16, 20-22 and 26 is/are rejected.
- 7) ☒ Claim(s) 10, 17-19 and 23-25 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claims 1, 3, 5, 7-10, 14, 15, 17, and 21-25 are objected to because of the following informality:

Re claims 1, 3, 5, 7-10, 14, 15, 17, and 21-25, it is not clear what the "/" represents in "BSC/PCF".

Claim Rejections - 35 USC § 112, Second paragraph

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 10, it is not clear what is meant by "*transmitting... message from the original BSC/PCF to a PCF of the original BSC/PCF*". The statement is confusing.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects

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for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Shafik et al (USPUB 20010050907), hereinafter referred to as Shafik.

Re claim 11, Shafik discloses the MSC receiving location update request with the power-down notification from the MS (*receiving, at a mobile switching center (MSC), location renewal information of a mobile station that is performing a dormant handoff;* paragraph [0035]) and determines if the session is dormant (*determining whether the mobile station is in a state for executing the dormant handoff, when the location renewal information is received,* paragraph [0035]). Shafik discloses sending an indication of the authentication failure from the MSC to the BSC to release its connection with the BSC (releasing a radio packet link by transferring registration renewal information from the MSC to a first base station controller/packet controller function, if the mobile station is in the state for executing the dormant handoff, paragraph [0015], lines 6-10).

Re claim 13, Shafik discloses a MSC/VLR storing information for a serving packet control function (paragraph [0031], lines 9-11).

Claims 14-16 and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Madour (USPUB 20020021681).

Re claims 14 and 20, Madour discloses a mobile station, a source PDSN that communicates with the MS via a source BSC/PCF, through a first communication link,

while the MS is located within a service area of the source BSC/PCF, a target PDSN that communicates with the mobile station, via a target BSC/PCF, through a second communication link, after the mobile station has moved from the service area of the source BSC/PCF to a service area of the target BSC/PCF, a mobile switching center (MSC) that communicates a dormant handoff message to the source BSC/PCF, after the second communication link is established, wherein the dormant handoff message initiates the termination of the first communication link by the source PDSN and the source BSC/PCF (figure 3a; paragraphs [0033] – [0035]). Madour discloses performing a dormant packet handoff during a first communication link between a mobile station and a source packet data serving node (PDSN) (figure 3; paragraph [0033]). Madour discloses establishing a second communication link between the mobile station and a target PDSN, after the mobile station has moved from a service area of a source base station *controller/packet control function (BSC/PCF) to a service area of a target BSC/PCF* (figure 4a; paragraph [0043]). Madour discloses the MSC sending a handoff command to the serving BSC (*communicating a dormant handoff message from a mobile switching center (MSC) to the source BSC/PCF*, paragraph [0036], lines 5-7). Madour discloses the serving PCF sending a message to the serving PDSN to release the connection between the nodes (*terminating the first communication link between the mobile station and the source PDSN, in response to the dormant handoff message*, paragraph [0037], lines 1-5).

Re claims 15 and 21, Madour discloses the serving BSC sending a message to the MSC after an disconnected ack message is received from the serving PCF (*communicating from the source BSC/PCF to the MSC an acknowledgment of the*

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dormant handoff message, after terminating the first communication link, paragraph [0038], lines 1-5).

Re claims 16 and 22, Madour discloses terminating the first communication link without waiting for a registration renewal timer period, an upper layer point-to-point protocol (PPP) timer period, or a radio packet link timer period to expire (paragraph [0040], lines 5-6).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madour (USPUB 20020021681) in view of Shafik.

Re claims 1, 2, and 4, Madour discloses the Mobile Switching Center (MSC) sending a handoff message to the target BSC and sending a handoff command message to the serving BSC serving Base Station Controller (BSC) (*providing information of the dormant handoff from the MSC to an original BSC, paragraph [0022], lines 1-8; lines 23-25*). Madour fails to disclose determining with a MSC whether a mobile station performs a dormant handoff into an area of a destination BSC. Shafik discloses MSC checking to

see if the MS (mobile station) is hosting dormant packet-data session and sending a location update message to the BSC if the session is dormant (paragraph [0035], lines 6-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to include Shafik for optimizing the use of packet resources by releasing a hanging packet data connection when a MS performs a power-down while in a dormant packet-data session.

Re claim 3, Madour discloses the connection being preset-up between the target PCF and the PSDN (packet data serving node) (*the information of the dormant handoff is provided after setting a radio packet link with the destination BSC/PCF(packet controller function) and a destination packet data serving node*, abstract).

Re claim 5, Madour discloses all of the limitations of the base claim, but fails to teach releasing a radio packet link between the original BSC/PCF and the mobile station by transferring a registration request message from the original BSC/PCF to an original packet data serving node (PDSN). Shafik discloses the PCF triggering registration request to the PSTN for disconnecting the connection between BSC and MS (*releasing a radio packet link between the original BSC and the MS by transferring a registration request message from the original BSC/PCF to an original PDSN*, paragraph [0042]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to include Shafik for optimizing the use of packet resources by releasing a hanging packet data connection when a MS performs a power-down while in a dormant packet-data session.

Re claim 9, Madour discloses the Mobile Switching Center (MSC) sending a handoff message to the target BSC and sending a handoff command message to the serving BSC serving Base Station Controller (BSC) (*providing information of the dormant handoff from the MSC to an original BSC*, paragraph [0022], lines 1-8; lines 23-25). Madour fails to disclose discriminating with a MSC whether a mobile station performs a dormant handoff into an area of a destination BSC. Shafik discloses MSC checking to see if the MS (mobile station) is hosting dormant packet-data session and sending a location update message to the BSC if the session is dormant (paragraph [0035], lines 6-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to include Shafik for optimizing the use of packet resources by releasing a hanging packet data connection when a MS performs a power-down while in a dormant packet-data session. Madour discloses all of the limitations of the base claim, but fails to teach releasing a radio packet link between the original BSC/PCF and the mobile station by transferring a registration request message from the original BSC/PCF to an original packet data serving node (PDSN). Shafik discloses the PCF triggering registration request to the PSTN for disconnecting the connection between BSC and MS (*releasing a radio packet link between the original BSC and the MS by transferring a registration request message from the original BSC/PCF to an original PDSN*, paragraph [0042]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to include Shafik for optimizing the use of packet resources by releasing a hanging packet data connection when a MS performs a power-down while in a dormant packet-data

session. Madour discloses the serving BSC sending a clear complete message to the MSC (*transmitting a location renewal acknowledge message from the original BSC/PCF to the mobile switching center*, paragraph [0025]).

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madour in view of Shafik and further in view of Barna et al (USPUB 20020046277), hereinafter referred to as Barna.

Re claim 6, Madour and Shafik disclose all of the limitations of the base claim, but fail to disclose removing a visitor table of a corresponding mobile station when the original PDSN receives the registration request message from the original BSC/PCF; and transmitting charging data to a corresponding sever. Barna discloses the closing of the multi-session by sending a message to the server (paragraph [0011], lines 2-6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to include Barna for temporarily storing the information of an MS entering the service area of the MSC and discarding the stored information when the MS moves into another service area so that the new accounting session would be correlated with the old accounting session.

Re claim 7, Madour discloses releasing the radio packet link in response to the registration request message (paragraph [0025], lines 3-4), but fails to disclose removing, at the original BSC/PCT, a radio packet link table of the mobile station. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to discard a radio packet link table of the mobile station at BSC so that

BSC/PCF would be able to maintain or update a radio packet link table for optimized function of packet resource management.

Re claim 8, Madour discloses the serving BSC informing the MSC that the handoff is successful by sending a clear complete message after the PDSN sending to the serving PCF a message (*the packet dormant handoff for the mobile station is completed at the original BSC/PCF by transmitting a location renewal acknowledge message from the original BSC/PCF to the mobile switching center, after transmitting a response to the registration from the original PDSN to the original BSC/PCF*, paragraph [0025]).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shafik.

Re claim 12, Shafik discloses all of the limitations of the base claim, but fails to disclose the MSC receiving the registration renewal information of the MS through an American national Standards Institute (ANSI)-41 message format. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to conform to the ANSI-41 message format that would meet the requirements of compatibility to the wireless standards.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Madour.

Re claim 26, Madour discloses all of the limitations of the base claim, but fails to disclose setting a lifetime field value of the registration request message to zero. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to set a lifetime field value of the clear command message to

zero to initiate a release of the resources that are no longer needed for optimized function of packet resource management.

Allowable Subject Matter

8. Claim 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
- Claim 17-19, and 23-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement for reasons for allowance.

9. Claim 10 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest a method of transferring an A9-Update-A8 message from the original BSC/PCF to a packet controller function (PCF) of the original BSC/PCF, to inform the PCF that the mobile station has moved, transmitting an A11 registration request message from the PCF to the original PDSN, transmitting an A11 registration response message from the original PDSN to the PCF, and releasing the radio packet link at the original PDSN.

Claims 17 and 23 are allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest a method of communicating from the source BSC/PCF to the source PDSN a registration request message having a lifetime field value set to zero, in response to receiving the dormant

handoff message, releasing resources supporting the first communication link within the source PDSN, in response to the registration request message, communicating to the source BSC/PCF a registration response message having a lifetime field value set to zero, after releasing the first communication link, and releasing resources supporting the first communication link within the source BSC/PCF, in response to the registration response message, wherein the zero value in the lifetime field of the registration request message informs the source PDSN that the first communication link is ready for termination, the zero value in the lifetime field of the registration response message informs the source BSC/PCF that the first communication link is ready for termination, and both the source BSC/PCF and the source PDSN terminate the first communication link without waiting for a registration renewal timer period to expire.

Claims 19 and 25 are allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest a method of withholding the communication of a registration renewal message from the source PDSN to the source BSC/PCF, during a period beginning after the source PDSN receives the dormant handoff message and ending when the first communication link is terminated.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - US Patent (5594943) to Balachandran

- US Patent (6519235) to Kim et al
- US Patent (6081715) to La Porta et al


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087.

The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3088.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hc
Hong Cho
Patent Examiner
7/15/2005


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